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EXAMINER

KOCH, GEORGE R

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/787,189

Applicant(s)

WAIN ET AL.

Examiner

George R. Koch III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/27/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-14, and 24-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada (GB 2,289,941 A)

As to claim 1, Yamada discloses an adhesive monitoring system (Figure 1) for monitoring the application of adhesive to an item, wherein the system includes means for determining the position of the item on a production line (the *signal* from arrival sensor 4, which notes the arrival of the blank, and therefore is a means for determining the position), camera means for taking an image of a monitored item (television camera 8), means for triggering the camera means¹ to take an image of the item at one or more set item positions (timing pulse signal generator 10 - which is "for generating a timing pulse indicating when the glued object passes over the image making device" - see

¹ It should be noted that the phrase "camera means" does not meet 112 6th paragraph requirements to be analyzed for means plus function. The term "camera" is not a verb, and therefore the phrase lacks a function for the analysis.

page 3, and therefore is a means with the function), and processing means for analyzing the images produced and for determining the correct application of adhesive from this analysis (comparison device 11 - which compares the stored data with the image data, and therefore is a means for processing).

As to claim 2, Yamada discloses comparing the gluing pattern with a reference pattern (for example, 7c). This pattern is a "reference image".

As to claim 3, Yamada discloses that the processing means analyzes the item images to recognizes features (such as adhesive segments in figure 7c) within the item image.

As to claim 4, Yamada discloses analyzing the pixels in the camera (page 14, line 16-22). Therefore, Yamada discloses analyzing the item images along one or more measurement lines. In any event, Yamada is capable of analyzing as claimed.

As to claims 5 and 6, since Yamada analyzes pixels (page 14, line 16-22), the measurement lines are in directions in which AND transverse to the direction in which adhesive is applied to the item.

As to claim 7, Yamada discloses monitoring the length of an adhesive track (compare figure 7b with figure 7c, and see the related description in pages 14-15).

As to claim 8, Yamada discloses monitoring the width of an adhesive track (see page 16, final 4 lines).

As to claim 9, the apparatus of Yamada is considered capable of monitoring the number of adhesive tracks applied to the item (for example, each pitch in Figures 7a, 7b, and 7c represents a track).

As to claim 10, since Yamada analyzes pixels (page 14, line 16-22), and since Yamada can analyze in the length and width directions (see page 16, final 4 lines), Yamada is capable of monitoring the angle of application of an adhesive track.

As to claim 11 and 12, Yamada images the entire adhesive application. Therefore, the camera images the start, end, and intermediate locations.

As to claim 13, Yamada discloses that the item position determining means comprises means for determining when the item has reached a preset position, and wherein the triggering means triggers the camera means to take an image a set time after the item has reached the preset position (described on page 9, lines 3-13).

As to claim 14, Yamada discloses an encoder (item 5) for monitoring the movement of a conveyor of the production line, wherein the item position determining means comprises means for determining when the item has reached a preset position (the location of sensor 4), and wherein the triggering means triggers the camera means to take an image when the encoder indicates that the conveyor has moved a set distance since the item reached the preset position (described on page 9, lines 3-13).

As to claim 24, Yamada discloses a calibration routine (page 14), which includes means for obtaining the dimensions of an item to be monitored (see page 14, lines 11-12 - which recites calculating a length of a calibration piece) by passing a correctly configured item through the monitoring system (i.e., the calibration piece).

As to claim 25, Yamada discloses sensor means (sensor 4 itself, which combines with encoder 5 for determining the length) for sensing leading and following edges of an

item, and means for determining a dimension of the item from the sensing of the edges (described on page 14).

As to claim 26, the apparatus of Yamada, especially arrival sensor 4, is capable of being used to identify the flap.

As to claims 27-29, the apparatus of Yamada is capable of being used to confirm dimension information and operate off dimension information as claimed.

As to claim 30, the apparatus of Yamada is capable of applying to a blank with a flap, and is capable of having offsets and start points in the dispensing pattern.

As to claim 31, Yamada discloses a production line.

As to claim 32, Yamada discloses an method of monitoring the application of adhesive to an item on a production line (Figure 8), including the steps of determining the position of the item on the production line (S6 - sensing arrival of object), triggering a camera to take an image of a monitored item at one or more set item positions (S7 - timing pulse signal transmitting and S8 - image making), and analyzing the images produced to determine whether adhesive has been correctly applied to the item (S8 - gluing pattern detecting, S9 - comparisons of images with gluing pattern, and S10 - display OK or NOT).

As to claim 33, Yamada discloses a monitoring system for monitoring items on a production line (see Figure 1), the system including camera means (item 8) for providing one or more images of an item to be monitored, means for determining one or more dimensions of the item to be monitored (comparison device 11 - which calculates the

location and length - see page 14, lines 3-15), and means for controlling the camera means dependent on the determination of these dimensions (glue pattern setting device 9).

As to claim 34, Yamada discloses various means for outputting the dimensions, including displaying the pixels counted (see page 14), and testing whether the glue dimensions are acceptable.

3. Claims 33-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Hattori (US 5,993,367).

As to claim 33, Hattori discloses a monitoring system for monitoring items on a production line (see Figure 1), the system including camera means (item 13, disclosed as a CCD matrix array camera in column 6, line 29) for providing one or more images of an item to be monitored, means for determining one or more dimensions of the item to be monitored (the gap - see abstract, which recites "computing a ratio of a length of the offline segment to the entire length of the light image line to obtain a width of the gap"), and means for controlling the camera means dependent on the determination of these dimensions.

As to claim 34, Hattori discloses that the system includes means for outputting said dimensions (display unit 15 - called a determination results display unit - see column 7), in order to obtain confirmation that the determined dimensions are acceptable.

As to claim 35, Hattori discloses that an operator inputs information regarding the item to be monitored (see column 7, which recites "preset upper limit and lower limit", another term for input information"), and the system includes means for checking the input information with the determined dimensions (CNC 20).

As to claims 36 and 37, Hattori discloses monitoring for gaps. Therefore, Hattori inherently includes offset data, since an offset is a gap. This gap can be the offset position of an adhesive track.

4. Claim 38 is rejected under 35 U.S.C. 102(b) as being anticipated by Lapidot (US 4,758,888).

Lapidot a system for rejecting an item from a production line (see column 2, line 66), the system including monitoring means (camera 14) for determining whether an item is defective or not, means for rejecting a defective item (monitor 15, see column 3), and means for monitoring the movement of the defective item and for issuing an instruction (column 4, lines 15-22) to the rejecting means to reject the item when the defective item reaches the rejection means.

5. Claims 38-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugimura (US 5,876,502).

As to claim 38, Sugimura discloses a system for rejecting an item from a production line, the system including monitoring means for determining whether an item is defective or not, means for rejecting a defective item (see column 6, lines 48-64), and

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means for monitoring the movement of the defective item (encoder 7) and for issuing an instruction to the rejecting means (column 6, line 58 - which discusses "removing of the defective sheet) to reject the item when the defective item reaches the rejection means.

As to claim 39, Sugimura discloses a tab monitoring system for monitoring the removal of a tab from an item, wherein the system includes means for determining the position of the item on a production line (sheet end detection sensor 3), camera means for taking an image of a monitored item (camera 22), means for triggering the camera means to take an image of the item at one or more set item positions, and processing means for analyzing the images produced and for determining the correct removal of a tab from this analysis (see column 10, lines 46-61, which discloses recognizing and compensating for board scrap, i.e., tabs)..

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada as applied to claims 1-14 above, and further in view of Sugimura (US 5,876,052).

Yamada does not disclose that the item is a blank, or that the processing means analyzes the images to determine whether one or more blank tabs have been removed. Yamada is silent as to the substrate details, although Yamada is clearly capable of operating on a blank.

Sugimura discloses that the item is a blank (a corrugated board sheet - see abstract), and that the processing means analyzes the images to determine whether one or more blank tabs have been removed (it analyzes for board scrap - i.e., tabs - for example, column 8). Sugimura discloses that this processing step avoids mistaken detection caused by scrap material. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used such a processing step in order to avoid mistaken detection caused by scrap or tab materials.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada as applied to claims 1-14 above, and further in view of Hattori (US 5,993,367).

Yamada does not disclose means for allowing the camera means to move transverse to the production line. Yamada is silent as to whether the camera moves or not, being more directed towards the image processing and calibration system.

However, Hattori discloses a positioning device (item 12), which are means for allowing the camera means to move relative to the production line. Hattori discloses that the positioning device is intended to bring the camera and light source in correspondence with the bonded area. One in the art would appreciate that the movement would be a transverse movement, as a parallel movement would not be capable of bringing the camera into correspondence (column 6, lines 46-65, and column 7, line 46-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used means for allowing the camera means to move transverse to the production line in order to ensure that the camera is aimed such that it is in correspondence with the expected bonded area.

10. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada as applied to claims 1-14 above, and further in view of Leary '931 (US 6,299,931)

Yamada does disclose camera means (item 8) and adhesive application means (item 6), but does not disclose any mechanical information as to how the camera means and adhesive application means are arranged.

Leary '931 discloses arranging the arrival sensor (item 125 - see Figures 1A and 1B), applicator (item 130), and sensor for monitoring application (item 135) on an applicator assembly (and see columns 3-6). Leary '931 utilizes the set distances between the applicator and sensor (column 3, lines 48-53) in order to set and control the application timing (see column 3, line 63 to column 4, line 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have

used such an applicator assembly that connects the applicator and camera in order to simply the calibration and setting of the operation.

11. Claims 18-20 and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada as applied to claims 1-14 and 24 above, and further in view of Leary '722 (US 5,375,722).

As to claim 18 and 19, Yamada merely discloses transmitting an error signal when a determination of adhesive misapplication is made (page 9, lines 12-13). Yamada does not discuss (1) marking for removal or (2) rejecting by tracking the carton.

However, Leary '722 discloses rejecting (called "kicking") or marking the defective carton blank (column 3, lines 7-8). Leary also discloses shift register systems for tracking the defective carton prior to rejection (column 6, line 55 to column 7, line 17, etc). Leary discloses that it is desirable to do this in order to "avoid individual inspection of the cartons" (column 1, lines 10-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilize either (1) marking for removal or (2) rejecting by tracking the carton as in Leary in order to avoid individual inspection of the cartons.

As to claim 20, Leary '722 as incorporated discloses (column 6, line 55 to column 7, line 17, etc) tracking the "carton widths" until the defective carton reaches the kicker (or rejection) station. Therefore, Leary '722 discloses monitoring the amount of movement (or carton widths) of a conveyor as part of a rejection subroutine.

As to claim 25, the arrival sensor of Yamada is considered capable of identifying leading and following edges. Furthermore, Leary '722 discloses a flap timing sensor and flap sensing means (for example, claim 11), which identifies the flap and its condition. The flap sensing means includes the ability to identify multiple flaps, i.e., multiple edges. An identification of the flap ensures proper product coating and flap size. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the flap sensing structures of Leary in order to ensure proper coating and flap size.

As to claim 26, Yamada merely discloses an arrival sensor, and does not disclose that this sensor is positioned to sense the leading or trailing edges of a flap portion.

However, Leary '722 discloses a flap timing sensor and flap sensing means (for example, claim 11), which identifies the flap and its condition. An identification of the flap ensures proper product coating and flap size. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the flap sensing structures of Leary in order to ensure proper coating and flap size.

As to claims 27-29, the apparatus of Yamada as modified by Leary is capable of being used to confirm dimension information and operate off dimension information as claimed. One such dimensional information would be flap dimensions. An identification of the flap ensures proper product coating and flap size. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the flap sensing structures of Leary in order to ensure proper coating and flap size.

As to claim 30, the apparatus of Yamada is capable of applying to a blank with a flap, and is capable of having offsets and start points in the dispensing pattern. Furthermore, Leary discloses monitoring flaps (see claim 11). An identification of the flap ensures proper product coating and flap size. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the flap sensing structures of Leary in order to ensure proper coating and flap size.

12. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada as applied to claims 1-14 above, and further in view of Lapidot (US 4,758,888) and Leary '722 (US 5,375,722).

As to claim 21, Yamada does not disclose any recording of the addresses or position of defective items. Yamada does disclose an encoder for monitoring movement of a conveyor of the production line (encoder 5).

However, Lapidot discloses that the system records in a memory address (i.e., data storage means 16) a pass or fail for an item dependant on the analysis by the processing means. Leary '722 discloses a system (figure 1) includes an encoder for monitoring movement of a conveyor of the production line, wherein the system records in a memory address (shift registers for tracking rejected/defective items- column 6, line 55 to column 7, line 17, etc) a pass or fail for an item dependant on the analysis by the processing means, and wherein the system increments the address for each record in accordance with the output of the encoder, the addresses corresponding to set

positions on the conveyor line. Lapidot discloses that monitoring defective items and storing the information in data systems allows for the production line to continue. Leary discloses that storing the information allows for downstream operations to eliminate the defective blank. In essence, both operations utilize these systems to expedite processing of correct blanks and simplify processing of defective blanks. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used these systems to expedite processing of correct blanks and simplify processing of defective blanks.

As to claim 22, Leary as incorporated discloses checking, at set intervals, the record held in a memory address (i.e., the shift register operation) associated with a rejection location of the conveyor line, and activates rejection apparatus when the record in that memory address indicates a fail. Lapidot also discloses a sorting station (item 17) which functions similarly.

As to claim 23, Hattori and Leary as incorporated above is considered capable of maintaining a count of the number of defective items.

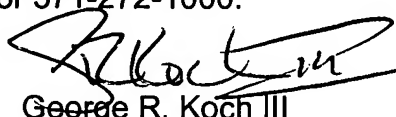
Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and giving the operator the above TDD number. The examiner can also be reached by E-

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mail at george.koch@uspto.gov <<mailto:george.koch@uspto.gov>> in accordance with MPEP 502.03. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



George R. Koch III
Primary Examiner
Art Unit 1734

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